

CLAIMS

We claim:

1. A machine for assembling seats for use in vehicles that have a seat frame supporting a cushion covered by a finish fabric, comprising:

a seat frame holder having at least one clamping member that secures the seat frame in a chosen orientation;

a mover that selectively causes movement of the seat frame holder;

an alignment portion having at least one alignment member that is adapted to protrude through an opening in the fabric and to be at least partially received within a receiver in the seat frame, the alignment member operating to align the opening and the receiver, the alignment portion being moveable independent of and relative to the seat frame holder; and

a biasing device that biases the alignment portion toward the seat frame holder, the bias of the biasing device being overcome by the force of the mover moving the seat frame holder such that the alignment portion selectively moves with the seat frame holder.

2. The machine of claim 1, wherein the alignment portion comprises a support plate and including two post alignment members supported on the support plate.

3. The machine of claim 1, wherein the alignment portion is supported on a carriage that is moveably supported for selective movement relative to the seat frame holder and movement with the holder responsive to movement of the mover, respectively.

4. The machine of claim 3, wherein the biasing device comprises a pneumatic cylinder that biases the carriage toward the seat holder.

5. The machine of claim 4, including a pressure regulator that regulates a bias provided by the biasing device, the pressure regulator automatically releasing pressure from the pneumatic cylinder responsive to the force of the mover moving the seat holder.

6. The machine of claim 5, including a manually operable control that allows an operator to selectively adjust the bias of the biasing device by controlling the pressure regulator.
7. The machine of claim 1, including at least one manually operable control that allows an operator to selectively adjust a position of the alignment portion relative to the seat holder.
8. The machine of claim 1, including a carriage supporting the alignment portion, the carriage being biased by the biasing device, and wherein the alignment portion is selectively adjustable relative to the carriage.
9. The machine of claim 1, wherein the biasing device is selectively controlled to remove any bias and the alignment portion is selectively moveable out of an operative position relative to the seat holder such that the alignment portion is selectively not used for a seat assembly process.

10. A machine for assembling seats for use in vehicles that have a seat frame supporting a cushion covered by a finish fabric, comprising:

a plurality of fabric cover supports arranged to at least temporarily support the fabric cover in a position to receive the seat frame;

a seat holder having at least one clamping member that secures the seat frame in a chosen orientation relative to the fabric cover supports;

a mover that selectively causes movement of the seat frame holder; and

an alignment portion having at least one alignment member that is adapted to protrude through an opening in the fabric and to be at least partially received within a receiver in the seat frame, the alignment member operating to align the opening and the receiver, the alignment portion being moveable independent of and relative to the seat frame holder.

11. The machine of claim 10, including a control for selectively operating the mover to cause the seat holder to move relative to the supports such that the seat frame is inserted into the fabric cover.

12. The machine of claim 11, including a control to independently control a position of the alignment portion relative to the supports.

13. The machine of claim 10, including a carriage that supports the alignment portion and wherein the biasing device is operative to selectively bias the carriage toward the seat holder.

14. The machine of claim 13, wherein the alignment member is selectively moveable relative to the carriage.

15. The machine of claim 13, including a biasing device that biases the alignment portion toward the seat frame holder, the bias of the biasing device being overcome by the force of the mover moving the seat frame holder such that the alignment portion selectively moves with the seat frame holder.

16. The machine of claim 15, wherein the biasing device comprises a pneumatic cylinder that biases the carriage toward the seat holder and including a pressure regulator that regulates a bias provided by the biasing device, the pressure regulator automatically releasing pressure from the pneumatic cylinder responsive to the force of the mover moving the seat holder.

17. The machine of claim 16, including a manually operable control that allows an operator to selectively adjust the bias of the biasing device by controlling the pressure regulator.

18. The machine of claim 10, wherein the alignment portion includes a support plate and including two post alignment members supported on the support plate, the posts being adapted to protrude through two fabric openings and to be at least partially received into two receivers in the seat frame.

19. The machine of claim 10, wherein the biasing device is selectively controlled to remove any bias and the alignment portion is selectively moveable out of an operative position relative to the seat holder such that the alignment portion is selectively not used for a seat assembly process.

20. The machine of claim 10, including a first manually operable control for selectively energizing the mover and a second manually operable control for selectively adjusting a position of the alignment portion relative to the seat holder.